



Cloth Room shaft turns 226 turns
per min -

36 ins Pulley drives 24 ins Pulley

Oct 6th 1851 - took levels on dam that
has just been rebuilt, called the Spring
Dam - viz -

Middle of Old Dam	229
South End of New Dam	235 $\frac{1}{2}$
South End of Old Dam	127 $\frac{3}{4}$
South end of South Wing New Dam	132
North End of New Dam	240 $\frac{1}{2}$
North end of North Wing, New Dam	138 $\frac{7}{16}$

At the South end of Old Dam, the staff
was put on top of an old log in which were
the tunnel holes of the old planking that
had been fastened to this log, but which were
off - leaving the log bare - The center or middle
of old dam, the staff was put on a knot in
a plank that was cut into the timber, the
planking of the dam ~~being~~ having been
fastened on top of this -

Oct 3 - Stone Mill Co.

T.P. 408.8

C. 456 -

450

528

472

446

2760.6

30 year on
Spring -

June -

15' 207 - 25 - 20

30' 208 - 30 - 30

30' 209 - 25 - 30

15' 210 - 10 - 10

5' 211 - 5 - 5

5' 212 - 5 - 5

185
Oct-8

28. Baker in Road

46 in. Cotton

24 in. " "

17 in. " "

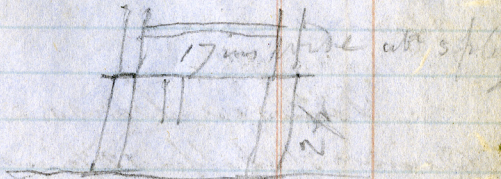
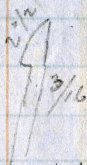
12 in. " "

20 in. " "

1 in. " "

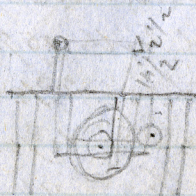
16 in. " "

164



1/4 in

2 ft 4 in high



5 ft high

2 in wide

3/8 in apart

1 1/2

1 1/2

1 1/2

Breaker Cards

Diam of Doffer 12 in - over wire $1\frac{1}{2}$

" Feed Rolls $1\frac{1}{4}$ in

Pulley on Feed Rolls $17\frac{5}{8}$ in diam
drives Pulley on Stud $2\frac{3}{8}$ -

Wheel on same stud 120 teeth
drives wheel on Main Cyl - 12 teeth

Pulley on stud $5\frac{1}{4}$ in drives

Doffer Pulley $9\frac{1}{4}$ in diam -

$$17.625 \times 5.25 \times 12.5 = 42,1 \text{ draft}$$

$$2.375 \times 9.25 \times 1.25$$

8-50-

Finisher Cards -

Diam of Doffer $12\frac{1}{2}$ in over wire

" Feed Rolls $1\frac{1}{4}$ in

Pulley on Feed Rolls $15\frac{1}{2}$ in diam drives

" Stud $2\frac{3}{8}$ -

" Do $4\frac{3}{4}$ in drives

" Doffer $9\frac{1}{2}$ in

gear 16 teeth on Main Cyl - drives

- 120 - Stud -

$$15.5 \times 4.75 \times 12.5 = 32,63 \text{ draft}$$

$$2.375 \times 0.5 \times 1.25$$

Breaker Gears - 113 turns of
Main Cyl for Minr

Drawing Frame

Gear on Front Roll 26 teeth drives

57 gear on Stud ²⁷ -

⁵⁷ 32 " Union on Dr drives

85 on Back Roll -

diam Front Roll - $1\frac{1}{4}$ in - Mid Back 1 in

$$26 \times 32 \times 1\frac{1}{4} = 7,278.8 \text{ draft}$$

$$26 \times 32 \times 1 = 832$$
$$57 \times 85 \times 1\frac{1}{4} = 7,157$$

$$27 \times 32 \times 1 = 864$$
$$57 \times 85 \times 1\frac{1}{4} = 6,640$$

$$28 \times 32 \times 1 = 896$$
$$29 \times 32 \times 1 = 928$$
$$57 \times 85 \times 1\frac{1}{4} = 6,180$$

after

$$34 - 5.82$$
$$36 - 5.49$$

Speeder - Fr Roll 28 teeth drives

56 teeth Stud - 36 teeth pinion

drives 50 teeth Mid Roll

50 Mid Roll drives 32 teeth
Stud which drives 60 teeth back
Roll - diam Fr Roll $1\frac{1}{8}$ Mid Back $\frac{1}{2}$

draft Speeder -

$$\begin{array}{l} 28 \times 36 \times 50 \times 32 \times 7 \\ 56 \times 50 \times 32 \times 60 \times 9 \end{array} = 4,285 \text{ -draft}$$

F&B Back Rolls

Spinning draft -

Gear on Front Roll 29 teeth drives
- 68 teeth on Stud - 33 teeth on D.
drives 113 on Back Roll -

$$\begin{array}{l} 29 \times 33 \times 7 \\ 68 \times 113 \times 8 \end{array} = 9.18 \text{ draft}$$

$$\begin{array}{l} 29 \times 30 \times 7 \\ 68 \times 113 \times 8 \end{array} = 10.093 \text{ draft}$$

say Alter Speeder draft to

$$\begin{array}{l} 28 \times 28 \times 50 \times 32 \times 7 \\ 56 \times 50 \times 32 \times 60 \times 9 \end{array} = 5.57 \text{ draft}$$

for Back Roll

For a Yarn Reel $3\frac{1}{4}$ Yards round
turn not quite 8.6 ins diam? -
say ^{ins} 8, 59454

Monsieur

Drafts - Spind - 9.18
 Speeder - 4.285

dbls Draw 9.4 to 1 6.18
 36 to 1 Finish Card 32.63

Breaker - 42,
 Lap Spreader 2,

$$48 \times 2 \times 42 \div 36 \times 32.63 \div 4 \times 6.18 \times 4.285 \times 9.18 = 221845, \text{ in}^2$$

30 runs in a skein

Spinning pulley turns 661 turns per
 min - Main Cyl $1\frac{1}{4}$ in diam -
 wheel - 1 -

30 teeth pinion on Shaft of Main Cyl
 drives 114 teeth inside pulley -

$10\frac{1}{2}$ in pulley on d_e drives

16 in pulley on 1st Roll -

$$30 \times 10.5 \times 1 \times 1 = 11.37 \text{ twist to } 1 \text{ inch}$$

$$114 \times 16 \times 6.25 \times 3.1416$$

31 teeth 11 twist

32 " 10.66 "

33 " 10.33 "

34 " 10.03 "

35 " 9.74 "

36 " 9.47 "

24 teeth 14.21

28 " 12.18

31 " 10.03

34 " 10.03

to drive the Fe Roll 90 times per minute with 30
 pinion on - $\frac{1}{1}$ the water wheel turns 6.33
 Spinning -

661 turns of Spring Pulley per minute

661 \times 6.25 = 4131 turns Flyer per minute

$\frac{28}{24}$ - - - 106.5 turns -
 91 turns -

661 \times 30 \times 105 = 114, turns Fe Roll
 114 \times 16 = 114, turns per minute

114 \times 3.1416 diam Fe Roll = 358 inches
 per minute to 1 spindle, or
 to 572 spindles 183296 ins or 5091 $\frac{1}{2}$
 per minute -

Speeder

276 turns of Main Pulley per minute

276 \times 49 \times 34 = 160.3 turns of Fe
 61 \times 47 Roll per minute

160.3 \times 35343 = 5665 ins per minute to
 1 spindle -

5665 ins \times 20 = 113300 ins or 314.7
 yds. per minute

Turns of Back Roll per minute

^{33 1/2 turns on stand}

$114 \div 8.029 = 14.2$ turns of Back Roll per minute diam $7/8$ in^{is} is. 2,7489 in circ[~]

$2.7489 \times 14.2 = 39.03$ in of Roping required to 1 spindle per minute -

$39.03 \times 572 = 19983$ ^{inches} roping per minute to 572 spindles - or 555 Yards -

say No 8 Yarn 6,720 Yds is 1 lb - then

5091 Yds = 1,757 of a pound spun per minute

say $3/4$ lb per minute then $60 \times 1.75 = 105$ lb of Yarn per hour -

Speeder

$160.3 \div 3.33 = 48.1$ turns of Back Roll per minute diam $7/8$ in^{is} is 2,7489 circums^{is}

$27489 \times 48.1 = 132,22$ in of Draw

to 1 spindle per minute $132.22 \times 20 =$

264440 in^{is} of Draw per minute to 20 spindles or 73.44 Yds

Spinning 30 spinion on 12.9 turns of

Back Roll per minute $27489 \times 12.9 = 35.46$ in to 1 spindle per minute

19-4-74
Drawing -

Draw 9 Pulley on F^o Roll $4\frac{3}{4}$ in dia
turns 189 times per minute

$189 \div 4.946 = 38.2$ turns of Back
Roll per minute

$189 \times 3.9270 = 742.203$ inches deliv'd
by Front Roll per minute - 2 deliveries =
~~1484.406~~ in per minute

Finisher Cards -

Main Cylr Pulley turns 113 times
per minute

$113 \div 16 \times 4.75 = 7.53$ turns of Doffer
 $120 \div 9.5$

per minute - diam of Doffer $12\frac{1}{2}$ in

$12.5 \times 3.1416 = 39.27$ in circumf then

$39.27 \times 7.53 = 295.7$ in deliv'd per minute by
1 card then $295.7 \times 6 = 1774.2$ in per minute for
6 cards -

36.2 turns of Back Roll per minute

$$36.2 \times 3.1416 = 113.7259 \times 4 = 454.9$$

in. to 1 head or 909.8 in. to 2 heads per
minute of Finisher Ref. wanted -

$$\frac{113 \times 16 \times 2.375}{120 \times 15.5} = 23.4 \text{ turns of feed}$$

rolls per minute $23.4 \times 3.927 = 903.27$ in
of lap taken in by feed rolls per minute

$$903.27 \times 36 \times 6 = 19504.8 \text{ in. of Breaker card and taken by feed rolls to 6 cards per minute}$$

$$9.03 \times 32 \times 6 = 1733, \text{ in Breaker card and}$$

$$9.03 + 30 + 6 = 1625 \text{ in Breaker Card and wanted -}$$

Breaker Cards -

Main Cyl pulley turns 113 times
per Minute

$$\begin{array}{r} 113 \times 12 \times 5.25 = 6,413 \text{ turns of Doffer} \\ 120 \times 9.25 \end{array}$$

Cyl per Minute

Diam of Doffer $12\frac{1}{2}$ ins

$$12.5 \times 3.1416 = 39.27 \text{ ins Circumf}$$

$39.27 \times 6,413 = 251,838$ ins per Minute
by 1 Card - then $251,838 \div 6 = 151,111$ per
minute to 6 cards

Recapitulation

Spinning requires 19983 ins of Speeder

Roping per Minute

For Speeder Roping 11330 ins it will re-

quire of Draw Roping 2644.4 ins -

For Draw Ropg 1421.57 ins it will

require of Finisher Roping 909.8 ins -

Finisher Cards 1779 ins require of Breaker Ropg

1950, 48 ins

only 3 ins

1,92

$$\begin{array}{l} 113 \times 12 \times 2,375 = 1.52 \text{ turns of feed} \\ 120 \times 17,625 \text{ Rolls per minute} \end{array}$$

$$1.52 \times 3927 = 5,969 \text{ ins. of laps per minute to 1 Card} - 5,969 \times 6 = 35,816 \text{ ins. of laps per minute to 6 Cards} -$$

$$35,816 \times 60 \times 11 = 23637 \text{ ins. for 11 hours. No 10 lap weighs } 12 \frac{1}{2} \text{ oz. to 96 ins. say } 96 \div 12 \frac{1}{2} = 7.68 \therefore 23637 : 192 \frac{1}{2} \text{ in } 11 \frac{1}{2} \text{ lbs}$$

If the pulley to Doffer is altered from 9.25 ins to 8 ins, the draft would be 48.7 & turns of Doffer 7.41 per minute - & turns of main cycle to 1 of Doffer 15.27 -

$$7.41 \times 39.27 \times 6 = 1746 \text{ ins per minute to cards}$$

Speeder gives 113.30 ins. of Roff per minute

Drawing gives 1421.57 ins. of Roff per minute

Finisher Cards give 1779 ins. from Doffer per minute

Breaker Cards give 1511 ins per minute

Take the Roping from the Break
Card and put it up back of Speeder
if 221845 ind is 7.33 then

158602 - - 5.24

run it thru the drawing gins

245037 - - 7.10

302 lb in a Skⁿ

Find the weight of lap to make
No. 10 yarn - 840 $\frac{14}{7}$ to skein No. 1
_{No. 9 yarn yds}
 $840 \times 10 = 8400 \div 9,18 \div 4,285 \times 4 \div$
 $6,18 \times 36 \div 32,63 \div 42 \div 2 = 1,81,33$
of a Yard or $1,8153 \times 36^{\text{in}} = 65,35^{\text{in}}$ -
then if 65.35 in is 16 oz what will 48
in. the length spread on a pin weigh -
 $65.35 : 16 :: 48 : 11,75 \text{ oz}$ - to which
add 6 per cent loss in working gives
12.45 oz as weight of lap for No. 10
Yarn - say $12\frac{1}{2}$ oz -

Comparative weight -
Yarn 1

Speed & Roving 9.18
Drawing End 39.336
Finish Card 60.774
Double Lap 55.057
Breaker Card 2312.394
Pickup Lap 4624.788

Total Drafts 4624.79 add 6 per cent
for Waste in Working is 4624.79
277.48
4902.27
One hank lap would weigh 4902.27

$$4902.27 \times 700 = 3,431,589$$

1 Hank N^o 10 Barn would weigh
700 grains

$30240 \div 48$ in length spread on
Picker = 630 of a hank in length -
then $3,431,589 \div 630 = 5446$ grains
weight to spread on 48 in ^{grains} say
as $7000 : 16 :: 5446 : 12.44$ ^{oz} weight
to spread on lap for N^o 10 Barn -

1 hank N^o 7 = 1000 grains

$$4902.27 \times 1000 = 4,902,270 \div 630 =$$

$$7781.38 \text{ grains } 7000 : 16 :: 7781.38 : 17.79$$

1 Hank N^o 8 = 875 grains

$$4902.27 \times 875 = 4,289,486.25 \div 630 =$$

$$6808.7 \text{ ^{gr} } 7000 : 16 :: 6808.7 = 15.56 \text{ ^{oz} lap}$$

1 Hank N^o 9 = 777.7 grains

$$4902.27 \times 777.7 = 3,812,495.779 \div$$

$$630 = 6051.58 \text{ grains} - 7000 : 16 :: 6051.58 =$$

$$13.83 \text{ ^{oz} lap}$$

1 Hank No. 11 Yarn wants weigh
636.36 Grains

$$4902,27 \times 636,36 = 3119608$$

$$3119608 \div 630 = 4952, \text{ Grains}$$

$$7000 : 16 :: 4952 : 11,31 \text{ oz laps}$$

1 Hank No. 12 Yarn wants weigh
583.33 Grains -

$$4902,27 \times 583,33 = 2859641 \div 630$$

$$= 4539. \text{ grains -}$$

$$7000 : 16 :: 4539 : 10,37 \text{ oz laps}$$

1 Hank No 7 is 1000 grains -
 $6824.43 \times 1000 = 682443000 \div$
 $630 = 10832.4 \frac{4}{5}$

$7000 : 16 :: 10832.4 : 24.75 \text{ to lap}$

1 Hank No 8 - is 875 grains

$6824.43 \times 875 = 5971376 \div 630 =$
9478.3 grains

$7000 : 16 :: 9478.3 = 21.66 \text{ to lap}$

1 Hank No 9 is 777.7 grains

$6824.43 \times 777.7 = 5307359 \div 630 =$
8424.3 grains

$7000 : 16 :: 8424.3 : 179.25 \text{ to lap}$

1 Hank No 10 - 17.33 to lap

1 Hank No 11 is 636.36 grains

$6824.43 \times 636.36 = 4342794 \div 630 =$
6893.3 grains

$7000 : 16 :: 6893.3 : 15.75 \text{ to lap}$

1 Hank No 12 is 583.33 grains -

$583.33 \times 6824.43 = 3980894 \div 630 = 6318.8 \frac{2}{3}$

$7000 : 16 :: 6318.8 : 14.44 \text{ to lap}$

840 Cards No 10 Yarn weighs $1\frac{6}{10}$ oz
 122 turns of Reel
 9 $1\frac{1}{2}$ Yds Speeder Roving —
 28,47 turns of Reel
 21,353 — Draw — —
 18,413 turns of Reel
 13,82 — Finisher — —
 17 turns Reel
 12,70 — Breaker Roving —

840 Yds No 9 Yarn weighs 777,7 grains
 half — — — 388,88 —

840 — No 8 — — — 875, —
 half — — — 437,5 —

840 — No 7 — — — 1000, —
 half — — — 500 —

840 — No 11 — — — 636,36 —
 half — — — 318,18 —

840 — No 12 — — — 583,33 —
 half — — — 291,665 —

For Weighing, use half the above
 turns of Reel. — say

50 turns of Reel
 420 Yds No 10 — weighs 350 grains
 61 turns of Reel
 45 $\frac{3}{4}$ Yds Speeder Roving
 14,235 turns of Reel
 10,676,5 Yds Draw — —
 9,715 turns of Reel —
 6,91 Yds Finisher — —
 8,5 turns of Reel — —
 6,35 $\frac{1}{2}$ Breaker — —

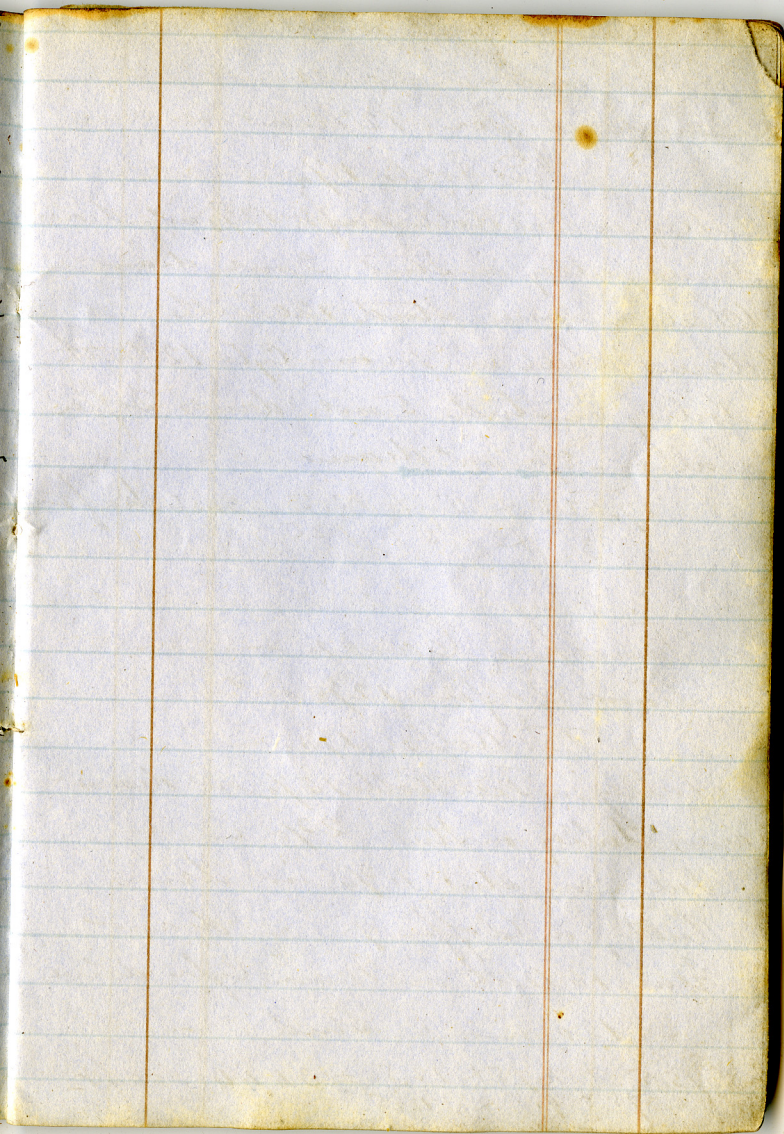
249
 216

Rule to find the weight of Cloth
 Find the number of yards of Warp,
 also the number of yards of Filling
 in a yard of Cloth - Divide the yards
 of Warp by the known number of the
 Warp yarn, also the yards of Filling by
 the known N^o of the Filling yarn. Add
 these products together and multiply
 the sum by the known weight of a
 yards of Cloth, the product is the Num-
 ber of yards to a pound, with the per-
 cent of take up deducted from the 840
 yards or usual length to a pound - thus

The known N^o of Warp is 20 - 2800 th^{ds}
 to the yard, & the known N^o of Filling is $23\frac{1}{2}$
 64 picks to 1 inch - 31 in Reed - and the cloth
 after being wove, weighs 3.27 lbs to 1 pound

$$\begin{array}{r}
 \text{say } 20 \overline{) 2800} \left(\begin{array}{r} 140 \\ 20 \\ 80 \\ 80 \end{array} \right. \begin{array}{r} 64 \\ 31 \\ 64 \\ 192 \end{array} \overline{) 84.42} \\
 235 \overline{) 1984} \left(\begin{array}{r} 140 \\ 84 \\ 42 \end{array} \right. \begin{array}{r} 140 \\ 84 \\ 42 \end{array} \overline{) 224.42} \\
 \hline
 1570 \ 94 \\
 4488 \ 4 \\
 \hline
 67326 \\
 \hline
 7338534
 \end{array}$$

Say 733.84 Pds to divide by, instead
 of 840



at Kennetunk -

Breaker Cards -

Diam of Doffer $12\frac{1}{2}$ in over wire

Feed Rolls $1\frac{1}{4}$ "

Pulley on Feed Roll shaft $17\frac{5}{8}$ in diam

drives pulley on Stud 3 in diam

Wheel on same Stud 120 teeth

drives wheel on Main Cyln 12 teeth

Pulley on Stud 5 in drives Doffer

Pulley - $8\frac{1}{2}$ in diam

$$17.625 + 5 \times 12.5 = 34.56 \text{ draft}$$

$$3 \times 8.5 + 1.25$$

Finisher Cards -

Diam Doffer $12\frac{1}{2}$ in -

Feed Rolls $1\frac{1}{4}$ "

Pulley on Feed Roll $15\frac{1}{2}$ in diam

drives Pulley on Stud $2\frac{3}{8}$ "

Pulley on Stud $4\frac{3}{4}$ in drives

Pulley on Doffer 9 " diam

gear 16 teeth on Main Cyln drives

120 " Stud -

$$15.5 + 4.75 \times 12.5 = 34.44 \text{ draft}$$

$$2.375 \times 9 + 1.25$$

$$113 \times 12 \times 3$$

$$120 \times 17.625 = 1,912 \text{ turns of Feed}$$

Rolls per minute

$$113 \times 12 \times 5 = 6,660 \text{ turns of Doffer}$$

$$120 \times 8.5$$

$$113 \times 16 \times 4.75 = 7,950 \text{ turns of Doffer}$$

$$120 \times 9$$

per minute -

Rack Speeder 57.6 ms

Drafts -

Picker or Lap Spreader	2
Breaker Card -	34.56
doubles 30 - for Finish	
Draft Finish Card	34.44
doubles to Drawing 4 -	
Draft Drawing -	6.18
" Speeder	4.285
" Spinning 10,093 -	10,093

Comparative Weight -

put up to Doubler 30 ends -

Yarn -	1.
Speeder Roving	10.093
Drawing	43.248.5
Finisher Card End	66.818
Doubler Lap	76.704
Breaker Card Lap	2650.89
Picker Lap	5301.78

One Hank lap N^o 10 weighs 700 gr^{ms}
then $5301.78 \times 700 = 3711246$

$30240 \div 48 \text{ in} = 630$ of a hank in
length spread on Apron of Spreader

$3711246 \div 630 = 5890.866$ grains
to spread in 48, in^{ch} - say as

$7000 : 16 :: 5890.8 : 13.46$
wt^{ts} to spread on lap for N^o 10 Yarn
 $13.46 \times 6 \text{ pr ct} = 14,326 \text{ to lap}$

840 Yards N^o 10. Yarn weighs 700 grains
55.5 turns Rev

83.21 Yds Spreader Roof - $\frac{1}{2}$ - 41.60

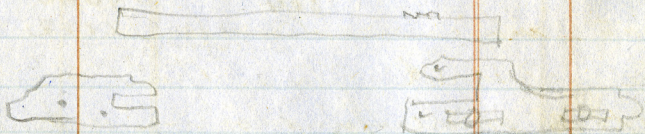
19.42 Yds Draw^{ing} Roof $\frac{1}{2}$ 13 turns
9.71

12.57 " Finisher Roof $\frac{1}{2}$ 8.37 turns
6.28

10.95 " Breaker Roof $\frac{1}{2}$ 7.3 turns
5.47

Varnish for Speed & Drawg Rolls
dissolve Gum Tragacanth in
Vinegar in a bottle - say 6 cents
worth of Gum - in 1 pint of Vinegar
dissolve Glue in Water -
when any Varnish is wanted for
use - take $\frac{1}{2}$ of each & thicken it
with Terra ^{de} Sarsaparilla ground fine
to the consistence required - to be
used when the rolls begin to get
sticky - and it will last till
the rolls want covering - or if it
does not - take water & wash the
varnish off & then put on a new
coat - which would not probably
be required oftener than once in
6 to 8 weeks - if as often.

1857 Decr 23^d - Mr Dwight
says the Exps on Drills in Boston
after they leave the Mills is 8 mills
per Card, for Int^r, Com^r on Sales &c
or 2.24 per lb. He also expects to
deliver Mid Fair Cotton at the Mills
for 8 1/2 ¢ per lb and Fair Cotton for
9 1/2 ¢ per lb. He expects the Drive
to be made for Mill Exps, Cotton &c
at 6 ¢ per Card —



Feby 13th 1852

Mem. Spindles in Pepp Mills
N^o 1 originally 60 Frames warp 7680 spin
added - 20 " " 2560 "
10240 spin.

20 Mules for Filling - 576
spindles each is - 11520 "
21760 "

Mill N^o 2 -

Warp & Filling Spindles 17280 spin.
originally 14976
since 2304 39040
deduct for
mule spin 1282
7680 Filling spindles 37502

11520 Mule Spindles are reckoned
equal to 10238 Throstle Spindles

Mill N^o 2 ^{LR} - 45 Filling Frames - 5760
with 15 " " 1420
60

7680

75 Warp Frames 128 each

9600

on Filling - doff every 55 minutes
Roving Bobbin runs 1 day

17280

Memorandum of specification of Deed to
Tarbox of Biddeford

Beginning at the corner where
my land joins said Tarbox's land on
the Northerly side of South Street, and
running Northerly on the line of my
land and said Tarbox's land, which line
runs twenty three inches from the Easterly
side of the Corner board of ~~said Tarbox's~~
~~house~~ of the front of the house of said
Tarbox on South Street, ninety seven
feet to the back line of said Tarbox land
thence running Easterly on a line parallel
to said South Street One foot, thence
Southerly ninety six feet more or less
to South Street, thence Westerly by
said South Street ten feet to the point
of beginning -

Duck in Mill No 2 Lower
Room -

2880 threads warp on 32 inches

60 picks Tilling -

No 13 1/2 Mary - Warp & Fill

31 inches wide when out of loom
and weighs 2 1/2 lbs to 1 lb -

to take out 48 threads or 1/60 part
of warp reduces in width to 30 1/2 ins
out of Loom - and weigh 2.33 1/2 lbs to
1 lb -



leaf tweel

Looms in Lower Weaving Room No 1 - 170

Do in Upper " - No 1 - 288

Total Looms in Mill No 1 - 458 -

Looms in Lower Weaving Room No 2 - 120

Do in Upper " - No 2 - 336

Total Looms in Mill No 2 - 456

COUNTING HOUSE ALMANAC, 1843.

1843.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	High Water	1843.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	High Water
JAN.	1	2	3	4	5	6	7	0 37	JULY	2	3	4	5	6	7	8	11 34
	8	9	10	11	12	13	14	7 11		9	10	11	12	13	14	15	5 4
	15	16	17	18	19	20	21	ev. 23		16	17	18	19	20	21	22	11 16
	22	23	24	25	26	27	28	7 54		23	24	25	26	27	28	29	4 26
	29	30	31							30	31						10 37
FEB.				1	2	3	4	morning	AUG.		1	2	3	4	5		3 24
	5	6	7	8	9	10	11	5 11		6	7	8	9	10	11	12	10 17
	12	13	14	15	16	17	18	11 21		13	14	15	16	17	18	19	2 22
	19	20	21	22	23	24	25	6 30		20	21	22	23	24	25	26	9 34
	26	27	28							27	28	29	30	31			
MAR.				1	2	3	4	11 50	SEP.						1	2	1 57
	5	6	7	8	9	10	11	8 3		3	4	5	6	7	8	9	9 17
	12	13	14	15	16	17	18	10 11		10	11	12	13	14	15	16	6 56
	19	20	21	22	23	24	25	4 45		17	18	19	20	21	22	23	8 26
	26	27	28	29	30	31				24	25	26	27	28	29	30	0 44
APR.							1	10 6	OCT.		1	2	3	4	5	6	8 14
	2	3	4	5	6	7	8	1 40		8	9	10	11	12	13	14	11 54
	9	10	11	12	13	14	15	9 4		15	16	17	18	19	20	21	7 10
	16	17	18	19	20	21	22	2 51		22	23	24	25	26	27	28	morning
	23	24	25	26	27	28	29	9 6		29	30	31					
	30								NOV.			1	2	3	4		7 1
MAY.		1	2	3	4	5	6	0 38		5	6	7	8	9	10	11	11 2
	7	8	9	10	11	12	13	7 53		12	13	14	15	16	17	18	5 33
	14	15	16	17	18	19	20	1 27		19	20	21	22	23	24	25	11 29
	21	22	23	24	25	26	27	7 56		26	27	28	29	30			
	28	29	30	31					DEC.						1	2	5 9
JUNE					1	2	3	morning		3	4	5	6	7	8	9	10 15
	4	5	6	7	8	9	10	6 36		10	11	12	13	14	15	16	3 32
	11	12	13	14	15	16	17	ev. 16		17	18	19	20	21	22	23	10 34
	18	19	20	21	22	23	24	6 26		24	25	26	27	28	29	30	2 53
	25	26	27	28	29	30				31							

LIST OF SUNDAYS AND HOLIDAYS.

JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1	5	5	2	7	4	2	5	8	1		3
2*	12	12	9	14	11	4*	13	16	8		13
8	19	19	16	21	18	9	20	17	15	17	17
15	26	26	23	28	25	16	27	24	22	26	24
22			30			23			29		31
29	Those marked thus (*) are Holidays.					30					

2090 (5)
205

20

The Slubber Roving Bobbin
holds 22 oz of Roving sets per day
Fly Frame Bobbin holds
12 oz of Roving sets per day

The Speeder Bobbin holds
16 oz of Roving sets per day
Extensor Bobbin holds
7 oz of Roving - sets per day
in Mill No 1 - Gaim No 2 $3\frac{1}{2}$

Spinning in Mill No 2 -
45 Pilling Frames of 128 spindles
each in Lower Room is 5760
15 Pilling Frames of 128 spindles
each in Upper Room is 1920
total Pilling Spindles 7680

Mr Everett weighed 6 oz of undressed
Yarn - and if it was dressed it was
found the same length weighed $6\frac{1}{2}$ oz -
equal to increase of weight by the
starch of 8 per cent -

1	man	Capt. R. D. R. D. R. D.	96
1		Ship	75
1	Boat	Abt. 21st	41
1	Boat	Dinner	41
1	Boat	Back	37
1		from	85

14	Girls	on Spring	609
13		Boat	419

Cardy Room Mill No. 1.

2 Slubbers, 60 spindles each is 120

1 Do 64 " " " 64

turns of Front Roll ^{twist .75} 170 -

8 Fly Frames, 88 spindles each is 904

turns of Front Roll ^{twist 2.5} 120 -

10 Stretchers of 60 spindles each 600

11 Spinners - 24 " " " 264

It is intended to take out

2 Spinners of 24 spindles each &
put in 1 Slubber of 64 spindles

Nov 1st 1852 Mem: - In Carding - the
Main Cylinders ought to be stripped often
and not allowed to run after the teeth
are filled up. for if they do, the Cotton is
not properly Carded out, but comes out
full of little wads or small bunches called
nits - which injures the look of the yarn
& cloth, for after passing the card in this
manner, it cannot be afterwards worked
out - The same effect is produced, when
the tops of the Card are dull, as then the
teeth will not take hold sharp and
pull the fibres of the Cotton out - but it
is rolled and tangled and drawn into little
knots - The Breaker Card, run 130 turns
per minute and cyl. stripped every 2 hours
& the Finisher card 2 1/2 hours -

Mem: These little nits as have been attributed
to Culvert Willow - and are also found
in the Cotton in the bale, more or less -
caused by ginning - which cannot be
carded out -

Diarn of Pulley on Vertical shaft 10.25 in.
 " Spindle whorl .875 in

4,125	60.5
3,1416	41
<hr/> 24750	<hr/> 605
4125	2420
16500	<hr/> 2480.5
4125	1025
12375	<hr/> 124025
<hr/> 124591000	49610
25	<hr/> 248050
647955	
259182	2834803/254251250
<hr/> 3234775	(89.689 turns of
1875	Spindle per
<hr/> 16198875	stretch to wind
22678625	on bare spindles
25918200	
<hr/> 2834803125	

If the spindles make 89.689 turns per min
 to wind in a stretch 60 1/4 in long what will the
 circumference be 89.689) 60.5000 (.67455 in²

The speed of spindles for winding yarn will
 be in accordance with their diarn, from
 which may be found the size of the winding
 on drum, or pinion on wind^g on drum shaft.

The Iron Contact Pulley on Cam shaft
 is 5 1/16 in diarn, and has 4 recesses, or spaces
 in it at equal distances - which relieve it
 from the leather Contact Pulley, assisted by
 4 pins, in the front of escape plate, each of
 which works against a spring, when the spring
 at the back of the escape plate moves forward
 holter to another when acted upon by the
 lever connected, and which gives the

by the assistance of the leather contact pulley, to the diff^t motions on the Cam shaft
viz Motions from the escape plate -

1st - Back & front Cams for the trap lever -

2^d - Backing off Cam connects with the friction pulley work & into back & off wheel pulley -

3^d - Front Roll eccentric -

4th - Stop finger connects with the Bell wheel shaft -

5th - Going in Eccentric -

6th - Drawing out Eccentric -

The follow^g are the alternate movements on the Cam shaft each stretch -

1st - Roller Gear & Drawing out Motion

2^d - Twist Motion -

3^d - Backing off Motion -

4th - Going on Motion -

Experiments tried in strip Card cylind:
to find about the filling up -

Finisher	3 hours, strip	3 to 9 1/2 oz
Breaker	3 " "	3 " 1 1/2 "
Finisher	1 1/60 " "	3 " 3 1/2 "
Breaker	1 1/60 " "	1 " 6 "

The wt of Finisher Lap No 2 mill is
2 to 7 oz to the foot -
and of Breaker Lap 2 to 7 1/2 oz to d -
May 6th 1853 -

Leans 72 picks 3.35 $\frac{1}{100}$ to 1th

Oil used in Weaving Room must have new
in Low Room No. $\frac{1.66}{100}$ of a glass
upper " No. $\frac{75}{100}$ ---
" " No. $\frac{87}{100}$ ---
to a loom - in weeks

Harnesses & Reeds
Section Beams of
the Buck gives
the right No. of
Threads -

We have the right
Harnesses & Reeds
But want all
new fixtures
in Dressing -

Want new Reeds
& Harnesses & all
new fixtures in
Dressing -

Same

Want new Reeds
& Harnesses - use
Section Beams in
Dresser -

first design of
mill No. 1 -

Threads in warp	No of Warp	Picks of Filling per Inch	No of Filling	Width in Reed	Width in Cloth	Warp to inch in Reed	Warp to inch in Cloth	Yards to the pound
1408	14	48	14	$32\frac{1}{2}$	$30\frac{1}{2}$	44	$46\frac{93}{100}$	3.48
"	"	45	"	"	"	44	$46\frac{93}{100}$	3.60
"	"	44	"	"	"	44	"	3.74
"	"	40	"	"	"	44	"	4.
1462	"	44	"	"	"	$45\frac{69}{100}$	$48\frac{73}{100}$	3.57
"	"	45	"	"	"	"	"	3.57
"	"	48	"	"	"	"	"	3.43
"	"	40	"	"	"	"	"	3.79
1332	"	40	"	"	"	$41\frac{62}{100}$	$44\frac{43}{100}$	4.12
"	"	44	"	"	"	"	"	3.76
"	"	45	"	"	"	"	"	3.79
"	"	48	"	"	"	"	"	3.69
1272	"	40	"	"	"	$39\frac{76}{100}$	$42\frac{40}{100}$	3.81
"	"	44	"	"	"	"	"	4.
"	"	45	"	"	"	"	"	3.90
"	"	48	"	"	"	"	"	3.87
1572	"	"	"	"	"	$49\frac{12}{100}$	$52\frac{40}{100}$	
1560	13	48	$12\frac{1}{2}$	$40\frac{1}{2}$	$38\frac{1}{4}$	$38\frac{52}{100}$	$40\frac{78}{100}$	

Mem^o from T Quinby's Book -
There are two ~~Bench~~ Hooks in the wall
near the West End of the Upper dam
One of them is top of the wheels in
Biddesford Mills $16\frac{1}{2}$ fr above Lower dam
The other Hook is top of Upper Stone
Dam $\frac{888}{1000}$ fr above the wheel dam
and $17\frac{888}{1000}$ fr above lower Dam

Upper Dam originally was 16 fr
above lower Dam

In building Pepperell Mills it
was called $16\frac{1}{4}$ fr above lower Dam
and the wheels were raised 6 ins higher
than was formerly contemplated - The
West End of Stone dam is 16.6 ins above
its dam

In Mill - the top of 1st floor $3\frac{1}{2}$ fr above
bottom of underpinning

There is a bench mark for Upper dam

in the Curb Stone by Sacoma Co Packg
House

The center of Water Wheels are 9 ft
above top of lower dam - The wheels
are 15 ft diam.

The foundation of Mill is 6 ft below the
top of lower dam and is $37\frac{1}{2}$ ft high
to bottom of underpinning stone -

Cham for Winder 3 ft $6\frac{1}{2}$ in

Waste from Cotton taken from the bale
and passed thro' Calverts Willow or
Opener - the average of 20 Bales is $45\frac{1}{2}$
tt to a bale - lowest 21 tt - highest 91^{tt}
as taken in Mill No 2 by Mr Woodwin

Waste taken from one set of Single Cards
tops 7 tt

Double Cards 1 set -

Fly 9 4 "

Tops 11 tt

Cyls 6 "

Fly 9 9 "

17 tt

Cyls 5 "

25 "

Mill
No. 2.

	Picks per Inch	Yards per day	Length of cut	Price per Cut	Cuts per Week	Wages per 4 Sawing includg 13%	Cost per Sawm of man
Printing	56	37	78	32 [¢]	11 $\frac{38}{100}$	\$3.66	3 $\frac{1}{2}$
Shirting	48	44	73	24 [¢]	14 $\frac{57}{100}$	3.49	3 $\frac{1}{2}$
Drilling	48	44	72	24 $\frac{1}{4}$	14.66	3.47	3 $\frac{1}{2}$

Spare help	
Total cost per Pound	Value to the Pound
3 $\frac{15}{100}$	6 $\frac{25}{100}$
1 $\frac{50}{100}$	3 $\frac{73}{100}$
1 $\frac{18}{100}$	2 $\frac{82}{100}$

Mem^o. Mill No 3 - Pepp^r
length of Card 6 ft 9 in
width - 0. 3-7-
Pulleys of each Row - on the same side -
placed 12 in a row - no two Pulleys
coming together for the reason that
it is easier to strip the tops placed
in this way than where two pulleys
are placed together - distance between
cards 21 in.

72 Finisher Cards to one half
the Mill -

3 Draw^g Frames - 1st Drawing
4 ends into one - 12 deliveries - is
4 Rolls 16 in² ea -
48 ends in all - cans 18 in diam

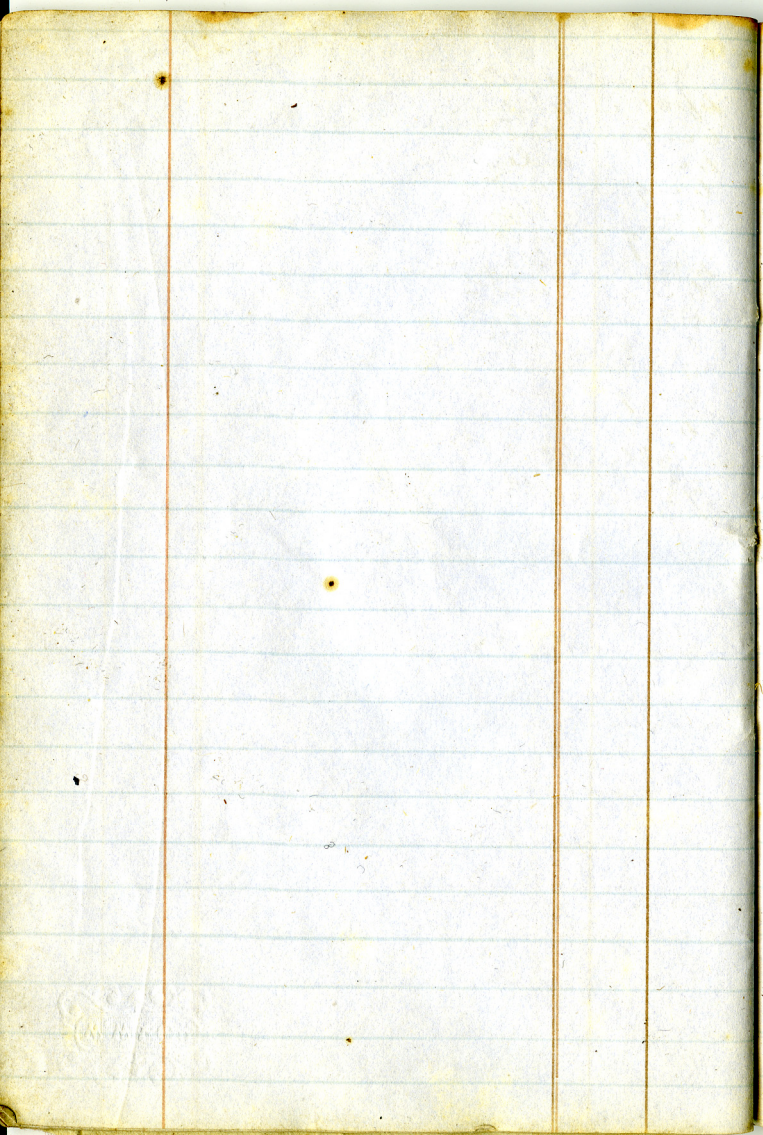
3 Draw^g Frames - 2nd Drawing -
2 to 1 - 30 deliveries - is 60 ends
in all -

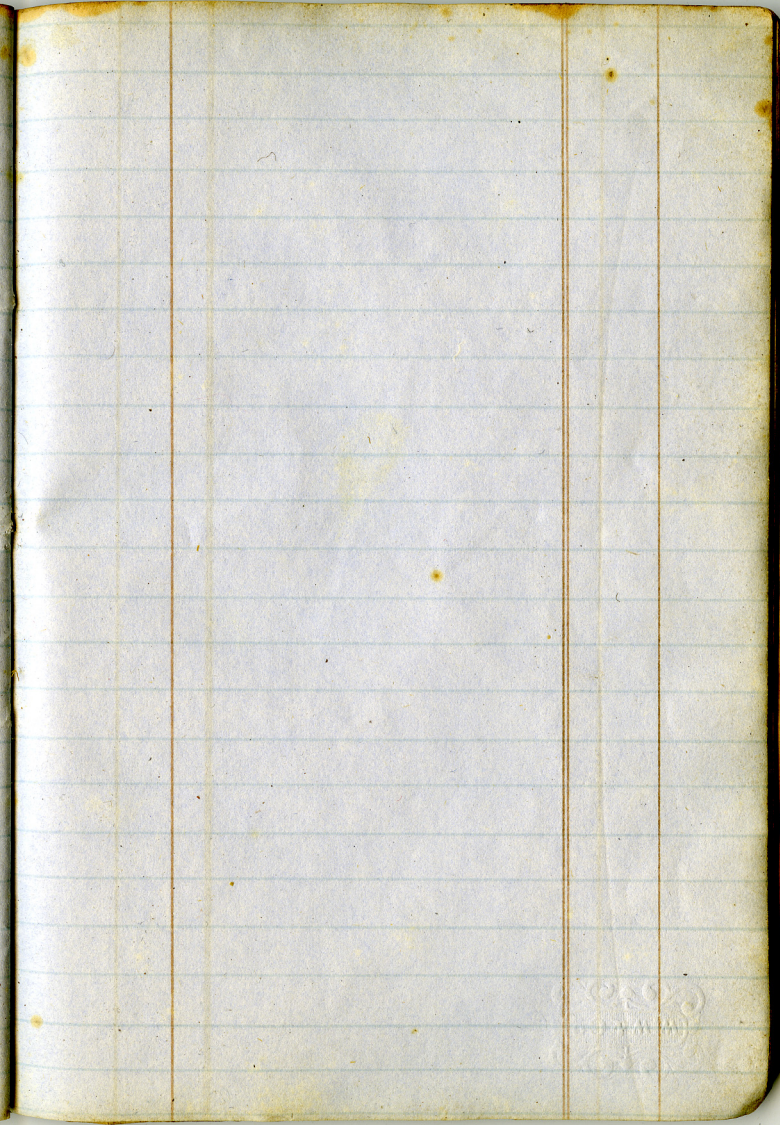
5 Rolls 16 in² ea
cans 18 in diam for slubbers
7 Slubbers of 72 Spindles each
10 Fly Frames 152 spindles ea -
Slubbers 24 ft long 5 ft 3 in wide
Fly Frames 28 ft 7 ³/₈ in long 3 ft wide -

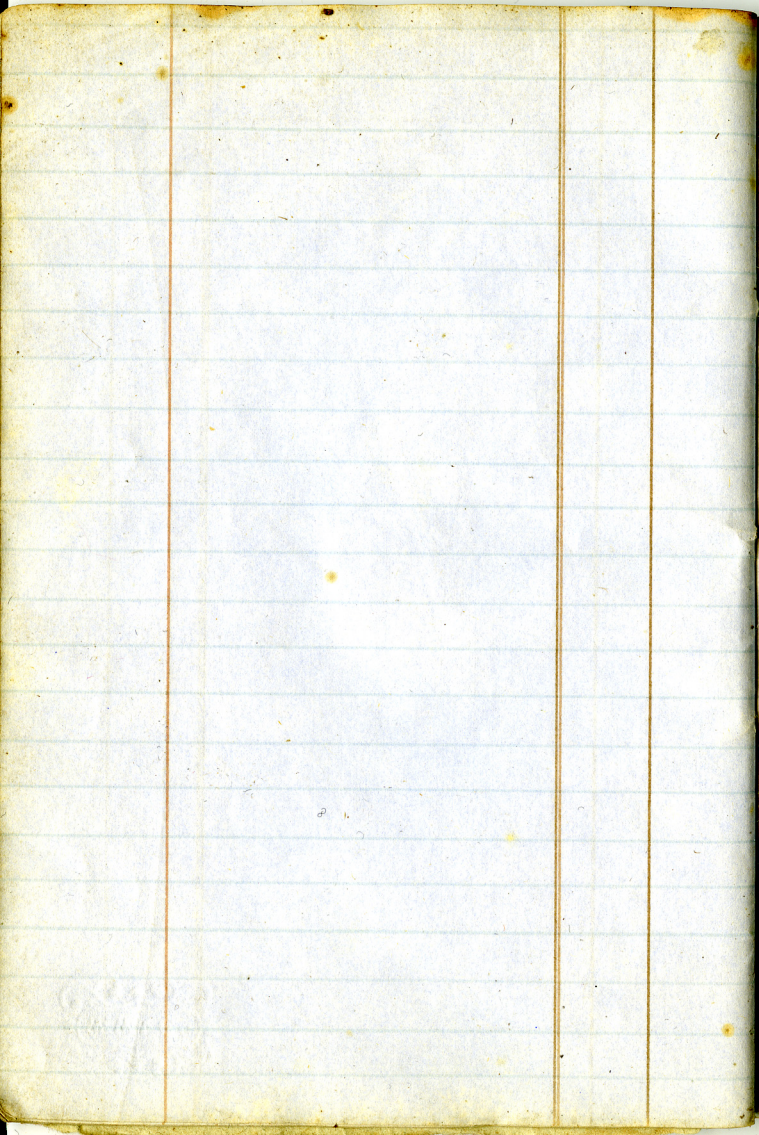
Card Room 3 story Peppert mill

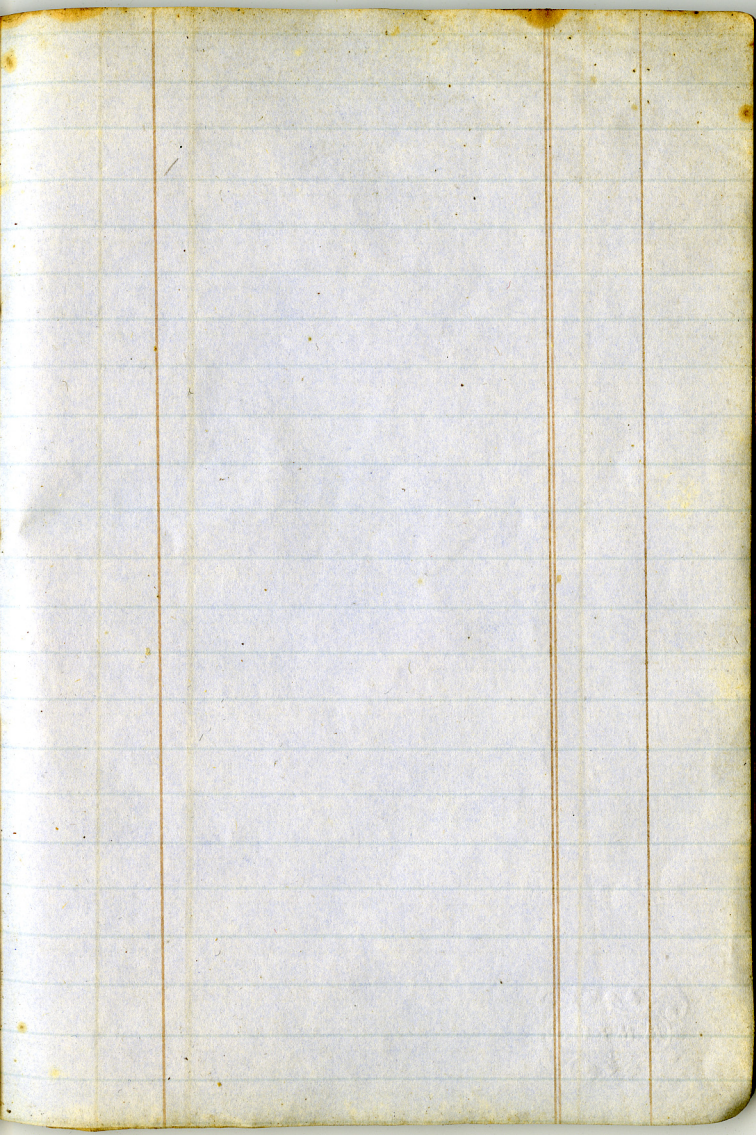
26 ins wall
4 ft 1 - alley
6 - 9 - card -
4 - - alley
6 - 9 - card
5 - - alley
6 - 9 - card -
4 - - alley -
6 - 9 - card -
5 - - alley
6 - 9 - card
4 - - alley
6 - 9 - card
4 - 1 - alley
26 wall

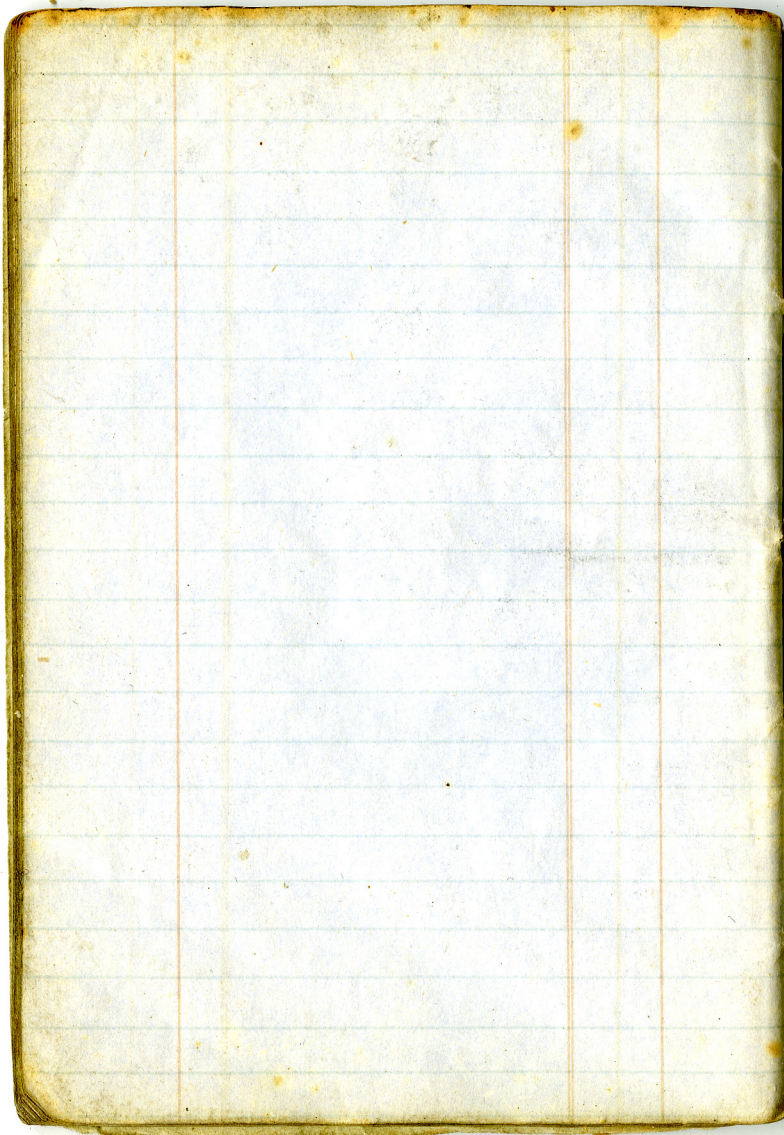
75 width











Dinner with Mrs. [unclear]
 Dr. Roll 29

back Roll	27	58	39
86	26	57	32
85	25	56	32
	50	54	32
	49		
	47		

31
 -65
 -35
 4.00
 15

2.25

to Depart	150	7.75	14
Fare -	2.00 ✓	25	5 -
"	35 ✓	8.02	
Boat -	2.25 ✓	8.25	
Boston	6.5 ✓	8.27	
Steel	14	8.10	
Mach.	5.00	8.37	
Papers	10 ✓		

Commiss	06 ✓
Worsted	1.60 ✓
Navigation	1.50 ✓
Books	1.13 ✓
Misc	.25 ✓
Canton	.25 ✓
Meals	.12 ✓
Fare -	2.00 ✓
Meal	.19 ✓

31-60

4.50
6.12

2700 336
2722 16
8129 28
365 66

Time 15
116

2 for 9

4 1/3

4 3 3/8

Dragr 29 m
68

30 0.103 113 back

5 15

2 1/2
7 1/2
8 3/4

Dragr 26 32 x 1

57-8.5 + 1

8.5
5.95

2.8
2.52

1.5

2.5
6.4

11.65
5.29

2.40

